

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P331643-927

Luminaire Tested: **SA2XXRDIP-C290D1080U927-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331643-927
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXRDIP-C290D1080U927-4F0-1E-UDD-F1
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1080 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3871.2 lumens
Efficiency: N/A
Efficacy: 91.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Indirect

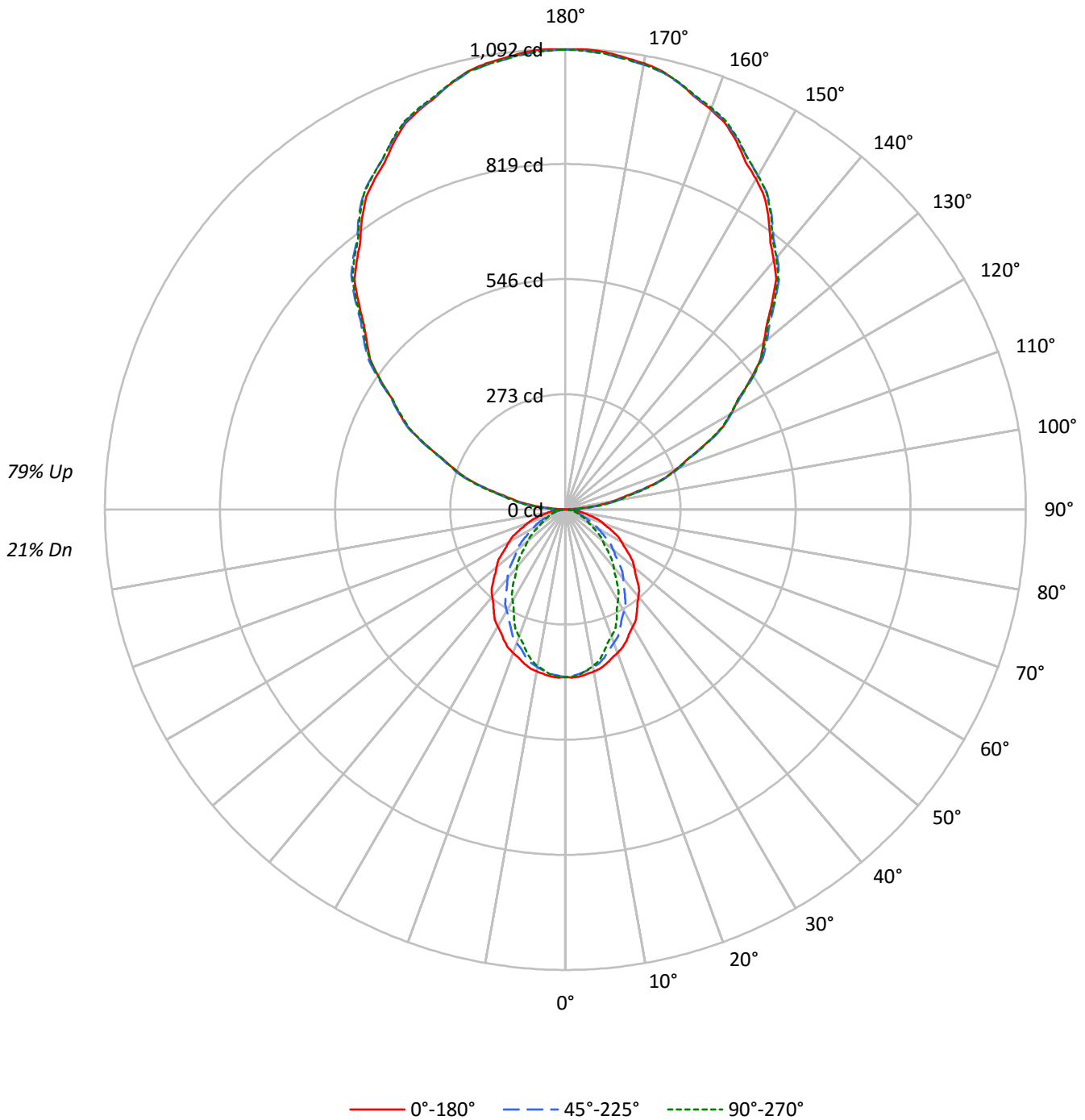
Input Watts (W): 42.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20	
RC	80					70					50					30					10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																						
0	100	100	100	100	89	89	89	89	67	67	67	48	48	48	30	30	30	21				
1	92	87	84	80	81	78	75	72	59	57	55	42	41	40	26	26	25	18				
2	83	77	71	66	74	68	63	59	52	49	46	37	35	34	24	23	22	16				
3	76	67	61	55	67	60	54	50	46	42	39	33	31	29	21	20	19	13				
4	70	60	52	47	61	53	47	42	41	37	33	29	27	25	19	17	16	12				
5	64	53	45	40	56	47	41	36	36	32	29	26	24	21	17	15	14	10				
6	59	47	40	34	52	42	36	31	33	28	25	24	21	19	16	14	13	9				
7	54	43	35	30	48	38	32	27	30	25	22	22	19	16	14	12	11	8				
8	50	39	31	26	44	35	28	24	27	22	19	20	17	15	13	11	10	7				
9	47	35	28	23	41	32	25	21	25	20	17	18	15	13	12	10	9	7				
10	43	32	25	21	39	29	23	19	23	18	15	17	14	12	11	9	8	6				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6421	6421	6421
5°	6446	6340	6374
10°	6396	6237	6184
15°	6322	6051	5877
20°	6220	5787	5498
25°	6116	5489	5129
30°	5972	5179	4657
35°	5830	4845	4242
40°	5689	4498	3762
45°	5523	4108	3329
50°	5350	3715	2901
55°	5177	3291	2494
60°	4973	2848	2070
65°	4741	2392	1883
70°	4471	1969	1733
75°	4130	1797	1616
80°	3645	1609	1469
85°	2853	1260	1260



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.2	1.0
10°-20°	102.2	2.6
20°-30°	143.5	3.7
30°-40°	156.5	4.0
40°-50°	143.9	3.7
50°-60°	113.0	2.9
60°-70°	73.7	1.9
70°-80°	38.0	1.0
80°-90°	14.2	0.4
90°-100°	69.1	1.8
100°-110°	214.6	5.5
110°-120°	366.8	9.5
120°-130°	482.4	12.5
130°-140°	541.4	14.0
140°-150°	530.9	13.7
150°-160°	445.3	11.5
160°-170°	295.3	7.6
170°-180°	103.2	2.7
0°-30°	282.9	7.3
0°-40°	439.4	11.4
0°-60°	696.4	18.0
0°-90°	822.2	21.2
90°-120°	650.5	16.8
90°-150°	2205.2	57.0
90°-180°	3049.0	78.8
0°-180°	3871.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	398	398	398	398	398	
5°	398	396	391	394	393	38
15°	378	374	362	355	352	106
25°	343	331	308	294	288	158
35°	296	277	246	224	215	185
45°	242	217	180	155	146	187
55°	184	155	117	96	89	164
65°	124	95	63	51	49	123
75°	66	42	29	26	26	70
85°	15	8	7	7	7	18
90°	1	12	32	31	31	3
95°	48	57	59	59	57	55
105°	198	201	202	204	204	209
115°	368	373	372	371	368	364
125°	536	543	541	538	537	478
135°	693	703	705	704	701	535
145°	841	847	853	854	850	525
155°	962	964	967	971	969	442
165°	1046	1045	1045	1051	1047	295
175°	1089	1086	1084	1090	1085	103
180°	1090	1090	1090	1090	1090	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	397.7	397.7	397.7	397.7	397.7	397.7	397.7	397.7	397.7	397.7	397.7
2.5°	399.1	398.8	398.5	398.2	397.8	397.3	396.6	395.9	395.2	394.5	395.1
5°	397.7	397.3	396.9	396.5	396.1	395.3	394.3	393.2	392.2	391.2	391.9
7.5°	393.6	393.1	392.5	392.1	391.6	390.7	389.5	388.2	387.1	385.9	386.0
10°	390.1	389.5	389.0	388.4	387.9	386.7	385.2	383.6	382.0	380.4	380.2
12.5°	385.8	385.1	384.4	383.7	383.0	381.7	379.6	377.6	375.5	373.4	373.0
15°	378.2	377.3	376.4	375.6	374.7	372.9	370.2	367.5	364.7	362.0	360.5
17.5°	368.9	367.6	366.2	364.9	363.5	361.2	357.7	354.2	350.7	347.2	345.4
20°	362.0	360.4	358.9	357.2	355.6	352.8	348.8	344.8	340.9	336.8	334.9
22.5°	354.6	352.8	350.9	349.2	347.4	344.2	339.7	335.2	330.7	326.2	323.6
25°	343.3	340.7	338.2	335.6	333.1	329.2	323.8	318.6	313.3	308.1	304.8
27.5°	329.8	327.0	324.2	321.5	318.6	314.3	308.3	302.4	296.4	290.5	286.7
30°	320.3	317.3	314.2	311.2	308.2	303.4	297.0	290.7	284.2	277.8	273.8
32.5°	311.1	307.5	304.0	300.4	296.8	291.8	285.3	278.8	272.3	265.7	261.1
35°	295.8	291.8	287.6	283.6	279.5	273.9	266.9	259.8	252.9	245.8	240.7
37.5°	280.6	276.1	271.6	267.1	262.6	256.7	249.1	241.6	234.2	226.6	221.1
40°	269.9	265.1	260.3	255.5	250.7	244.5	236.7	228.9	221.2	213.4	207.7
42.5°	259.0	253.9	248.8	243.8	238.8	232.2	224.2	216.2	208.2	200.2	194.3
45°	241.9	236.5	231.1	225.8	220.4	213.5	205.1	196.7	188.3	179.9	174.3
47.5°	225.1	219.4	213.8	208.1	202.4	195.3	186.6	177.9	169.2	160.6	155.0
50°	213.0	207.4	201.7	196.0	190.4	183.1	174.3	165.5	156.7	147.9	142.4
52.5°	201.2	195.3	189.4	183.5	177.5	170.2	161.6	153.0	144.4	135.8	130.5
55°	183.9	177.7	171.4	165.2	158.9	151.5	142.8	134.2	125.6	116.9	112.2
57.5°	166.1	159.7	153.3	146.9	140.5	133.2	124.8	116.6	108.3	100.0	95.5
60°	154.0	147.7	141.2	134.8	128.4	121.1	112.9	104.6	96.4	88.2	84.1
62.5°	142.2	135.9	129.4	123.0	116.6	109.5	101.6	93.8	86.0	78.1	74.2
65°	124.1	117.6	111.2	104.7	98.2	91.4	84.2	77.0	69.8	62.6	59.9
67.5°	106.7	100.3	93.9	87.5	81.0	74.5	68.0	61.6	55.1	48.6	47.4
70°	94.7	88.4	82.1	76.0	69.7	63.8	58.3	52.8	47.3	41.7	41.0
72.5°	83.1	77.2	71.1	65.2	59.2	54.0	49.6	45.2	40.7	36.3	35.6
75°	66.2	60.6	55.1	49.4	43.8	39.7	36.9	34.2	31.5	28.8	28.2
77.5°	49.6	44.7	39.8	34.9	29.9	26.9	25.5	24.2	22.9	21.6	21.3
80°	39.2	35.2	31.1	27.0	22.9	20.4	19.6	18.9	18.1	17.3	17.0
82.5°	29.7	26.5	23.4	20.2	17.0	15.1	14.6	14.0	13.5	13.0	12.8
85°	15.4	13.8	12.1	10.5	8.8	7.8	7.5	7.3	7.1	6.8	6.8
87.5°	4.8	4.8	4.8	4.8	4.7	5.1	6.0	7.0	7.8	8.7	8.6
90°	1.0	3.4	5.9	8.3	10.8	14.2	18.7	23.2	27.7	32.2	31.8
92.5°	16.4	18.1	20.0	21.8	23.6	25.0	26.1	27.2	28.2	29.2	29.3
95°	47.8	49.9	52.0	53.9	56.0	57.3	57.7	58.1	58.5	58.9	58.9
97.5°	87.5	89.2	91.0	92.8	94.6	95.9	96.6	97.4	98.2	99.0	99.0
100°	116.8	118.5	120.2	121.8	123.4	124.5	125.2	125.7	126.4	127.0	127.0
102.5°	147.8	149.1	150.4	151.7	153.0	154.1	154.9	155.6	156.4	157.2	157.3
105°	197.8	198.4	199.1	199.7	200.3	200.8	201.2	201.6	202.0	202.4	202.9
107.5°	248.3	249.1	250.1	251.0	251.8	252.3	252.3	252.3	252.3	252.3	252.5
110°	280.7	281.9	283.1	284.3	285.6	286.2	286.2	286.2	286.2	286.2	286.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	316.0	317.2	318.5	319.6	320.9	321.5	321.2	321.1	320.9	320.8	320.3
115°	368.0	369.3	370.5	371.8	373.0	373.4	373.0	372.6	372.2	371.8	371.5
117.5°	419.9	421.6	423.3	424.8	426.5	426.7	425.6	424.5	423.3	422.2	421.7
120°	454.6	456.2	457.9	459.5	461.1	461.1	459.5	457.9	456.2	454.6	454.6
122.5°	486.2	488.2	490.1	492.1	494.1	494.5	493.4	492.2	491.1	489.9	489.4
125°	535.5	537.4	539.2	541.1	542.9	543.5	542.9	542.3	541.7	541.1	540.4
127.5°	583.6	585.9	588.3	590.6	592.9	593.7	592.9	592.2	591.5	590.7	590.0
130°	613.8	616.4	619.1	621.7	624.4	625.5	625.1	624.7	624.3	623.9	623.4
132.5°	647.6	649.8	652.0	654.1	656.3	657.4	657.5	657.6	657.7	657.7	656.9
135°	692.9	695.1	697.4	699.7	701.9	703.2	703.6	704.0	704.5	704.9	704.6
137.5°	740.5	742.4	744.3	746.1	747.9	749.1	749.6	750.2	750.7	751.2	751.1
140°	769.3	771.1	772.9	774.8	776.7	778.1	779.1	780.1	781.2	782.1	782.1
142.5°	798.8	800.6	802.4	804.2	806.0	807.3	808.0	808.7	809.5	810.2	810.3
145°	841.1	842.5	843.9	845.3	846.8	848.1	849.3	850.6	851.8	853.0	853.2
147.5°	878.8	880.5	882.2	883.9	885.7	886.9	887.7	888.6	889.4	890.2	890.7
150°	904.5	905.8	907.0	908.2	909.4	910.5	911.3	912.1	912.9	913.8	914.3
152.5°	927.3	928.6	929.8	931.1	932.2	933.3	934.4	935.3	936.4	937.3	938.1
155°	961.6	962.2	962.8	963.5	964.1	964.6	965.3	965.9	966.5	967.1	968.1
157.5°	990.9	991.3	991.7	992.0	992.5	992.8	993.2	993.6	994.0	994.3	995.8
160°	1008.5	1008.9	1009.3	1009.7	1010.2	1010.4	1010.7	1010.9	1011.1	1011.3	1012.5
162.5°	1024.7	1024.8	1024.8	1024.9	1025.1	1025.2	1025.4	1025.6	1025.8	1026.0	1027.4
165°	1046.2	1046.1	1045.8	1045.6	1045.4	1045.4	1045.4	1045.4	1045.4	1045.4	1046.8
167.5°	1064.3	1063.7	1063.0	1062.5	1061.8	1061.5	1061.4	1061.4	1061.4	1061.4	1062.8
170°	1073.9	1073.2	1072.6	1072.0	1071.4	1071.0	1070.8	1070.6	1070.4	1070.2	1071.6
172.5°	1080.5	1079.9	1079.3	1078.6	1078.0	1077.6	1077.4	1077.2	1077.0	1076.8	1078.2
175°	1088.6	1088.0	1087.3	1086.7	1086.2	1085.6	1085.2	1084.8	1084.4	1083.9	1085.4
177.5°	1091.9	1091.4	1090.9	1090.4	1090.0	1089.5	1089.2	1088.9	1088.5	1088.2	1089.2
180°	1090.4	1090.4	1090.4	1090.4	1090.4	1090.4	1090.4	1090.4	1090.4	1090.4	1090.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	397.7	397.7	397.7	397.7	397.7	397.7	397.7	397.7
2.5°	395.8	396.4	397.0	397.3	397.2	397.0	396.9	396.8
5°	392.6	393.3	394.0	394.3	394.0	393.8	393.6	393.3
7.5°	386.3	386.5	386.7	386.6	386.2	385.7	385.3	384.9
10°	379.9	379.7	379.5	379.1	378.6	378.1	377.6	377.2
12.5°	372.6	372.2	371.8	371.1	370.3	369.6	368.8	368.0
15°	359.0	357.4	355.9	354.8	354.0	353.2	352.4	351.6
17.5°	343.6	341.7	340.0	338.4	337.0	335.6	334.2	332.9
20°	332.9	330.8	328.8	326.9	325.2	323.4	321.7	320.0
22.5°	321.1	318.5	315.9	313.9	312.6	311.3	310.0	308.7
25°	301.5	298.2	294.9	292.7	291.5	290.3	289.1	287.9
27.5°	282.8	279.0	275.2	272.4	270.5	268.5	266.6	264.7
30°	269.7	265.6	261.5	258.4	256.2	254.1	251.9	249.8
32.5°	256.4	251.8	247.1	243.8	241.8	239.7	237.7	235.7
35°	235.8	230.7	225.6	222.2	220.5	218.7	217.0	215.2
37.5°	215.6	210.0	204.5	200.7	198.7	196.6	194.6	192.6
40°	202.1	196.4	190.7	186.8	184.7	182.7	180.5	178.5
42.5°	188.4	182.5	176.7	172.8	170.7	168.7	166.7	164.7
45°	168.6	162.9	157.2	153.4	151.5	149.6	147.7	145.8
47.5°	149.2	143.6	138.0	134.3	132.5	130.8	129.0	127.3
50°	136.9	131.3	125.8	122.2	120.6	118.9	117.2	115.5
52.5°	125.2	119.9	114.5	111.1	109.6	108.0	106.4	104.9
55°	107.3	102.6	97.8	94.6	93.1	91.6	90.1	88.6
57.5°	91.2	86.7	82.4	79.5	78.3	77.0	75.7	74.4
60°	80.0	76.0	71.9	69.2	67.9	66.6	65.4	64.1
62.5°	70.3	66.5	62.6	60.2	59.4	58.7	57.9	57.1
65°	57.2	54.4	51.7	50.2	50.0	49.7	49.5	49.3
67.5°	46.2	44.9	43.6	42.9	42.6	42.4	42.1	41.9
70°	40.2	39.4	38.6	38.0	37.6	37.3	37.0	36.7
72.5°	34.9	34.2	33.6	33.2	33.0	32.8	32.6	32.4
75°	27.6	27.1	26.5	26.2	26.1	26.1	26.0	25.9
77.5°	20.9	20.6	20.3	20.1	20.0	19.8	19.7	19.6
80°	16.6	16.3	16.0	15.8	15.8	15.8	15.8	15.8
82.5°	12.6	12.4	12.2	12.1	12.1	12.1	12.1	12.1
85°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
87.5°	8.5	8.3	8.2	8.1	8.2	8.2	8.2	8.2
90°	31.4	31.0	30.6	30.5	30.7	30.9	31.1	31.3
92.5°	29.4	29.5	29.6	29.6	29.7	29.7	29.8	29.8
95°	58.9	58.9	58.9	58.7	58.3	57.9	57.4	57.0
97.5°	99.0	99.0	99.0	99.0	98.9	98.9	98.9	98.9
100°	127.0	127.0	127.0	126.9	126.7	126.5	126.3	126.0
102.5°	157.5	157.6	157.8	157.8	157.6	157.4	157.2	157.0
105°	203.3	203.7	204.1	204.3	204.3	204.3	204.3	204.3
107.5°	252.6	252.8	252.9	252.5	251.7	250.7	249.8	248.8
110°	286.2	286.2	286.2	285.9	285.3	284.6	284.0	283.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	319.8	319.3	318.9	318.4	317.9	317.4	317.0	316.6
115°	371.4	371.1	370.9	370.5	369.9	369.3	368.7	368.0
117.5°	421.2	420.7	420.3	419.7	419.1	418.4	417.8	417.2
120°	454.6	454.6	454.6	454.2	453.7	453.0	452.4	451.8
122.5°	488.9	488.5	487.9	487.5	487.0	486.6	486.2	485.7
125°	539.9	539.2	538.6	538.2	538.0	537.8	537.6	537.4
127.5°	589.3	588.5	587.8	587.1	586.5	585.8	585.2	584.5
130°	623.1	622.7	622.3	621.6	620.8	620.0	619.2	618.4
132.5°	655.9	655.1	654.2	653.4	652.8	652.0	651.4	650.8
135°	704.5	704.3	704.0	703.6	703.0	702.4	701.8	701.2
137.5°	750.9	750.8	750.6	750.1	749.2	748.5	747.7	746.8
140°	782.1	782.1	782.1	781.7	780.9	780.1	779.3	778.5
142.5°	810.5	810.6	810.8	810.5	809.6	808.8	808.0	807.2
145°	853.4	853.7	853.8	853.5	852.7	851.9	851.0	850.2
147.5°	891.1	891.5	892.0	891.8	891.0	890.3	889.5	888.7
150°	915.0	915.6	916.2	916.2	915.6	915.0	914.3	913.8
152.5°	938.9	939.6	940.4	940.4	939.6	938.9	938.1	937.3
155°	969.2	970.2	971.2	971.4	970.8	970.2	969.6	968.9
157.5°	997.1	998.5	999.9	1000.1	999.1	998.1	997.2	996.2
160°	1013.8	1014.9	1016.2	1016.4	1015.6	1014.8	1013.9	1013.1
162.5°	1028.8	1030.2	1031.6	1031.7	1030.8	1029.8	1028.8	1027.9
165°	1048.2	1049.6	1051.1	1051.2	1050.3	1049.2	1048.2	1047.2
167.5°	1064.2	1065.6	1067.1	1067.2	1066.2	1065.1	1064.1	1063.0
170°	1073.0	1074.4	1075.9	1076.0	1074.8	1073.6	1072.3	1071.1
172.5°	1079.7	1081.1	1082.5	1082.6	1081.4	1080.1	1079.0	1077.7
175°	1086.9	1088.3	1089.7	1089.8	1088.6	1087.3	1086.2	1084.9
177.5°	1090.2	1091.2	1092.1	1092.1	1091.2	1090.2	1089.2	1088.2
180°	1090.4	1090.4	1090.4	1090.4	1090.4	1090.4	1090.4	1090.4

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